IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Daniel T. Colbert et al.

For: MACROSCOPICALLY MANIPULABLE NANOSCALE DEVICES MADE FROM NANOTUBE ASSEMBLIES

Atty Dkt: 11321-P011C1D8

§ Serial No: unassigned (division of application Serial No. 10/000,746)

§ Filed: concurrently herewith

§ Group Art Unit: 2881 (anticipated)

§ Prior Examiner: Jack I. Berman 703.308.4849

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PRELIMINARY AMENDMENT ACCOMPANYING REQUEST FOR FILING DIVISIONAL APPLICATION UNDER 37 C.F.R. § 1.53(b)

Sir:

This paper accompanies a Request for Filing Divisional Application Under 37 C.F.R. § 1.53(b) and associated filing fee therefor ("the Request"). If the fee payment is missing or insufficient in amount, or if any other fees are determined to be due, the Assistant Commissioner, Commissioner, and/or the Director of the U.S. Patent & Trademark Office is/are hereby authorized to charge any such fees (or credit any overpayment) to Winstead Sechrest & Minick Deposit Account No. 23-2426, referencing matter number 11321-P011C1D8.

AMENDMENTS

In the Title

Please amend the title by replacing the present title with the following:

--CONTINUOUS FIBER OF SINGLE-WALL CARBON NANOTUBES--

In the Abstract

Please amend the abstract by replacing the present abstract with the following:

--This invention relates generally to carbon fiber produced from single-wall carbon nanotube (SWNT) molecular arrays. In one embodiment, the carbon fiber which comprises an aggregation of substantially parallel carbon nanotubes comprises more than one molecular array. Another embodiment of this invention is a large cable-like structure with enhanced tensile properties comprising a number of smaller separate arrays. In another embodiment, a composite structure is disclosed in which a central core array of metallic SWNTs is surrounded by a series of smaller circular non-metallic SWNT arrays.--

In the Specification

Please amend the specification as noted on page 4, paragraph 11 of the Request by inserting before the first line of the specification the following:

--RELATED APPLICATIONS

This application is a division of co-pending prior application Serial No. 10/000,746, filed on November 30, 2001, which is a continuation of prior application Serial No. 09/242,040 filed on September 13, 1999, which is the 35 U.S.C. § 371 national application of International Application Number PCT/US97/13896 filed on August 8, 1997, which designated the United

States, claiming priority to provisional U.S. patent application Serial Number 60/023,732 filed on August 8, 1996. Each of the foregoing applications is commonly assigned to the assignee of the present invention and is hereby incorporated herein by reference in its entirety.

This application discloses subject matter related to the subject matter of U.S. patent application Serial Number 09/380,545, filed on September 3, 1999 in the name of Richard E. Smalley et al., entitled "Carbon Fibers Formed From Single-Wall Carbon Nanotubes," which application is commonly assigned to the assignee of the present invention and hereby incorporated herein by reference in its entirety.--

In the Claims

Please amend the claims as follows.

Please cancel claims 1-83 without prejudice or disclaimer to the subject matter thereof.

Please add the following new claims 84-93:

84. (new) A continuous carbon fiber comprising single-wall carbon nanotubes in substantially parallel orientation.

85. (new) The fiber of claim 84 wherein a substantial portion of the single-wall carbon nanotubes have a homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof.

86. (new) A fiber of claim 84 having a composite structure comprising:

a) a first plurality of single-wall carbon nanotubes in a first region having a first homogeneous characteristic, wherein the first homogeneous characteristic is selected from the group consisting of lengths, diameters, helicities and combinations thereof;

b) a second plurality of single-wall carbon nanotubes in a second region having a second homogeneous characteristic, wherein the second homogeneous characteristic is

selected from the group consisting of lengths, diameters, helicities and combinations thereof; and

c) wherein, the first homogeneous characteristic is different from the second homogeneous characteristic.

87. (new) A composite fiber comprising a plurality of continuous carbon fibers, wherein each of the continuous carbon fibers comprise single-wall carbon nanotubes in substantially parallel orientation.

88. (new) The composite fiber of claim 87 wherein the composite fiber is a cable-like structure.

89. (new) The composite fiber of claim 87 further comprising:

a) a central core comprising metallic single-wall carbon nanotubes; and

b) non-metallic single-wall carbon nanotubes, wherein the non-metallic single-wall carbon nanotubes surround the central core.

90. (new) The composite fiber of claim 87 wherein at least some of the single-wall carbon nanotubes in at least a portion of the composite fiber are not parallel.

91. (new) A molecular array comprising single-wall carbon nanotubes aggregated in an orientation for growing a continuous carbon fiber.

92. (new) The molecular array of claim 91 wherein the orientation of the aggregated single-wall carbon nanotubes is substantially parallel.

93. (new) The molecular array of claim 92 further comprising a segment of an initial continuous carbon fiber, wherein the initial continuous carbon fiber comprises single-wall carbon nanotubes in substantially parallel orientation.

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REMARKS

1. *Status of the Application.* Claims 1-83 are cancelled herein without prejudice or disclaimer to the subject matter thereof. Claims 84-93 are added herein. No new matter is added by the addition of these claims.

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It is believed that each of the claims now pending in the present application recites elements neither taught nor suggested by the prior art. Further, it is believed that the application as a whole is in proper form and condition for allowance. If the Examiner believes that the application may be placed in even better condition for allowance, he or she is invited to contact the undersigned at the telephone number noted below. Alternatively, or in addition, if the Examiner believes that an Examiner interview would be beneficial, the Examiner is invited to note that the undersigned has ready access to the videoconferencing facilities of the South Central Intellectual Property Partnership at Rice University in Houston, Texas. The inventors and the undersigned would welcome the opportunity to use those facilities to clarify any issues deemed to remain unresolved.

Respectfully submitted,

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